REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

By this Amendment, claims 1-8 and 10-11 are amended to at least correct minor grammatical errors and to conform the claims according to commonly accepted US patent practice. Furthermore, claim 9 is canceled without prejudice or disclaimer.

Claims 1-11 stand rejected under 35 U.S.C. §103(a) over Zimmerman et al (US 5,521,726) in view of Magno et al (US 6,538,813). In response, claim 1 is amended, and as presented below, amended and unamended claims are patentable over the applied art for the failure of the applied art to not only disclose, teach or suggest all of Applicants' recited claim features, but in addition for the failure of the PTO to present any apparent reason to combine references or modify the prior art to create the Applicants' allegedly obvious claimed subject matter.

Still further, the disclosures of Zimmermann and Magno, taken as a whole, do not suggest Applicants' claimed display device.

As amended, claim 1 recites, *inter alia*, "a reflective layer (214) provided on an interface between a wave guide (216) and an interstitial region (212), wherein the reflective layer is configured to reflect ambient light entering the interstitial regions between the wave guides." (Emphasis added). Support for the amendment can be found at at least page 7, lines 13-30 and FIG. 2 of the specification, and original claim 9 showing that a reflective layer 214, preferably a thin metal layer, is provided on the interfaces between a recess 212 and an adjacent wave guide 216. Nowhere does the alleged combination of references disclose, teach or suggest at least these features, as recited in claim 1.

Applicants respectfully submit that Zimmerman appears to only disclose a polarizer 12 with an array of tapered waveguides 10 separated by interstitial regions 14 having a lower refractive index than the refractive index of the waveguides (Col. 3, lines 28-37 and FIG.1). The interstitial region 14 preferably includes a light absorbing material such as carbon black in order to absorb non-guided light and to reduce the surface reflectively of the polarizer 12 (Col. 2, lines 38-40).

Applicants respectfully submit, and the Examiner admits that nowhere does Zimmerman teach or disclose "a reflective layer" provided on an interface between the tapered waveguides 10 and interstitial regions 14. Furthermore, Zimmerman fails to suggest

wherein "a cross-section length of an exit surface of the tapered waveguide 10" is in the order of magnitude of a wavelength of light in the visible range," as recited in amended claim 1.

Still further, the absorbing material used in the interstitial region 14 of Zimmerman is in direct contact with the tapered waveguides 10 leading to excess absorption loss to light transmitted through the waveguides as disclosed in APA. Applicants respectfully submit that nowhere does Zimmerman suggest a display device with a contrast enhancing feature, nor can the device disclosed in Zimmerman reasonably expected to function as a contrast enhancing device.

The Examiner alleges that the metallized tapered waveguide of Magno remedies the deficiencies of Zimmerman. Applicants respectfully disagree. Magno, in Figs. 4 and 5, appears to only disclose wherein a metallic layer 43 prevents a light ray 101, emitted from a viewing screen 101, from escaping from waveguide 40. Nowhere does Magno suggest that metallic layer 43 reflects ambient light entering a region between the wave guides.

Furthermore, Zimmermann's metallized tapered waveguide 40 results in a larger output spread angle 41 (Col.3, lines 36-49, FIG. 4). Thus, Applicants respectfully submit that neither Zimmerman nor Magno teach or disclose that "a cross-section length of an exit surface of a tapered waveguides 10 is in the order of magnitude of a wavelength of light in the visible range."

Still further, the disclosures of Zimmermann and Magno, taken as a whole, do not suggest Applicants' claimed contrast enhancing element. Unlike Applicants' device that enhances contrast by absorbing ambient light incident to the display device, as recited in amended claim 1, the combination of references only relate to guiding light emitted from the display. Nowhere does either Zimmermann or Magno address light incident on their respective devices.

As disclosed in the Applicants' specification, if the recesses are packed sufficiently close to each other and their diameter is sufficiently small, the substrate is a particularly efficient light absorber for light that enters the substrate on the side comprising the relatively wide entrances of the narrowing recesses. Even when observed under bright ambient light conditions, the substrate appears dark black. A dark black state results in a high contrast ratio. The narrowing recesses are a dead end for incident ambient light, and the contrast enhancing element in the display device according to the invention absorbs a particularly high fraction of such light. Problems with stray light are minimized and a black state of the display appears relatively dark. Moreover, the reflective material on the interface between the

recesses and the wave guides hardly affects total internal reflection inside the wave guides, so that a particularly high fraction of light emitted by the picture elements is guided through the wave guide and transmitted. A white state of the display appears relatively bright. Also, diameter of the exit surface area is in the order of magnitude of a wavelength of light in the visible spectrum. In this case, emission from the wave guides is nearly isotropic, and the contrast enhancing means does not or hardly limit the viewing angle of the display. Thus, relatively small top angles can be used without effect on the viewing angle. Moreover, the exit surface of the wave guides, from which ambient light is reflected, constitutes a particularly small part of the surface of the display device facing the viewer, so that the amount of stray light is reduced even further.

Therefore, based upon the above disclosure, Applicants respectfully submit that amended independent claim 1 is patentable not only due to the failure of the applied references to disclose, teach or motivate all recited features of the claim, but is also patentable based upon the improper combination of Zimmermann and Magno. Claims 2-8 and 10-16 depend from this independent claim and are likewise patentable over the asserted combination of references for at least their dependence on an allowable base claim, as well as for the additional features they recite. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited. Early issuance of a Notice of Allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicants' attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
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